

AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A transporting apparatus, installed in a given clean environment, for transporting a plate from a predetermined takeoff position to a processing chamber, comprising:

a pair of upright support members standing at a predetermined interval;

at least one horizontal support table liftably cantilevered on the pair of upright support members;

a tilt adjuster including a tilt table formed on the horizontal support table;

a lift driver ~~driving means~~ for lifting the horizontal support table vertically; ~~and~~

a robot placed on the tilt ~~horizontal support~~ table and having horizontally rotating arms for taking up and transporting the plate; ~~and~~

a deflection compensator which controls a tilt angle of the tilt table with respect to the horizontal support table to compensate for deflection of the rotating arms.

2. (Currently amended) The transporting apparatus as claimed in claim 1, wherein the ~~robot~~ ~~drives the~~ horizontally rotating arms are extendable ~~to take the plate one of from~~ between the pair of upright support members ~~and back to between the pair of upright support members.~~

3. (Currently amended) The transporting apparatus as claimed in claim 2, wherein the ~~horizontal support table comprises~~ tilt adjuster changes ~~adjusting means for changing~~ an angle of the robot placed on the horizontal support table with respect to a horizontal plane.

4. (Currently amended) The transporting apparatus as claimed in claim 3, wherein the ~~further comprising:~~ deflection compensator compensates for ~~compensating means for compensating~~ a deflected amount in a vertical direction of the rotating arms and a deflected amount of end effectors provided at respective ends of the rotating arms for taking up and transporting the plate.

5. (Currently amended) The transporting apparatus as claimed in claim 4, wherein the deflection compensator ~~compensating means~~ compensates for the deflected amounts of said

rotating arms and said end effectors when the end effectors take up the plate.

6. (Currently amended) The transporting apparatus as claimed in claim 5, wherein the deflection compensator ~~compensating means~~ comprises a deflection storing device ~~means~~ for storing deflected amounts in the vertical direction at a plurality of predetermined measurement points involved in movement of a reference point on one of the rotating arms and the end effectors, and

wherein if the reference point moves to one of the measurement points, then the deflection compensator ~~compensating means~~ reads a deflected amount corresponding to a present position from the deflection storing device ~~means~~ to compensate the deflected amount.

7. (Currently amended) The transporting apparatus as claimed in claim 6, wherein the deflection storing device ~~means~~ stores a deflected amount due to a self weight and a deflected amount due to holding of the plate, and the deflected amount due to the self weight and the deflected amount due to holding of the plate are used by said deflection compensator ~~compensating means~~ to change a compensation amount.

8. (Currently amended) The transporting apparatus as claimed in claim 4, wherein the deflection compensator ~~compensating means~~ comprises a compensation controller ~~controlling means~~ for controlling the lift driver ~~driving means~~ to raise or lower the horizontal support table based on the deflected amount thereby to compensate deflection of one of the rotating arms and the end effectors.

9. (Currently amended) The transporting apparatus as claimed in claim 4, wherein the deflection compensator ~~compensating means~~ comprises a compensation controller ~~controlling means~~ for controlling the tilt adjuster ~~adjusting means~~ to tilt the robot placed on the horizontal support table to one of:

raise the end effectors to compensate deflection of one of the rotating arms and the end effectors;

lower the end effectors to compensate deflection of one of the rotating arms and the

end effectors;

raise the rotating arms to compensate deflection of one of the rotating arms and the end effectors; and

lower the rotating arms to compensate deflection of one of the rotating arms and the end effectors.

10. (Currently amended) The transporting apparatus as claimed in claim 4, wherein the deflection compensator ~~compensating means~~ comprises a compensation controller ~~controlling means~~ for controlling the lift driver ~~driving means~~ and the tilt adjuster ~~adjusting means~~ for one of:

raising the horizontal support table to compensate deflection of one of the rotating arms and the end effectors;

lowering the horizontal support table to compensate deflection of one of the rotating arms and the end effectors; and

changing the angle of the robot with respect to a horizontal plane by controlling the tilt adjuster ~~adjusting means~~ based on the deflected amount to compensate deflection of the rotating arms or the end effectors.

11. (Currently amended) The transporting apparatus as claimed in claim 1, further comprising:

a placing position detector ~~detecting means~~ including a placing position sensor for detecting passage of the plate held by the end effectors;

a calculator ~~calculating means~~ for calculating a displaced amount of the placing position from the reference point based on a detected signal of the placing position sensor; and

a displacement compensator ~~compensating means~~ for compensating the displaced amount of the placing position based on the calculated displaced amount.

12. (Currently amended) The transporting apparatus as claimed in claim 11, wherein the placing position detector ~~detecting means~~ calculates a displaced amount in an X axis direction, a displaced amount in a Y axis direction and a displaced amount in a rotational

direction from the predetermined reference point and the displacement compensator
~~compensating means~~ compensates the displaced amounts by moving the end effectors in such
a direction that the calculated displaced amounts are cancelled.

13. (Currently amended) The transporting apparatus as claimed in claim 1, further
comprising:

a moving device ~~moving means~~ for moving the pair of upright support members
horizontally.

14. (Previously presented) The transporting apparatus as claimed in claim 1, further
comprising:

a beam for fixedly coupling top portions of the pair of upright support members while
the pair of upright support members is held in parallel.

15. (Currently amended) A transporting control method of a transporting apparatus, installed
in a predetermined clean environment and having rotating arms and end effectors, for
transporting a plate from a predetermined takeoff position to a processing chamber,
comprising

based on position data of accessed position of the rotating arms and the end effectors,
calculating a moving amount in a horizontal direction, a moving amount in a vertical
direction and driving data of the rotating arms and the end effectors;

moving a robot based on the moving amount in the horizontal direction and the
moving amount in the vertical direction and driving the rotating arms and the end effectors
based on the driving data, the robot being formed on a tilt table which is formed on a
horizontal support table;

reading from a storing device ~~means~~ deflection data of the rotating arms and the end
effectors which are extended;

calculating compensation data for compensating a deflected amount based on the
deflection data; and

compensating the deflected amount based on the compensation data by controlling a
tilt angle of the tilt table with respect to the horizontal support table to compensate for

deflection of the rotating arms.

16. (Currently amended) The transporting control method as claimed in claim 15, wherein said controlling a tilt angle of the tilt table comprises compensating the deflected amount ~~comprises~~ adjusting a tilt angle of the robot based on the compensation data thereby to compensate the deflected amount.

17. (Currently amended) The transporting control method as claimed in claim 15, wherein said compensating the deflected amount comprises adjusting ~~at least one of the moving amount in the vertical direction and the tilt angle of the robot~~ based on the compensation data thereby to compensate the deflected amount.

18. (Currently amended) The transporting control method as claimed in claim 15, wherein the deflection data read in said reading from said storing device means includes deflection data at a plurality of moving points the rotating arms and the end effectors and the calculated compensation data includes compensation data at each of the moving points.

19. (Currently amended) The transporting control method as claimed in claim 18, wherein in said reading from said storing device means, the deflection data read from the storing device means depends on whether the plate is held.

20. (Currently amended) A transporting control method of a transporting apparatus, installed in a predetermined clean environment and having rotating arms and end effectors, for transporting a plate from a predetermined takeoff position to a processing chamber, comprising

based on position data of accessed position of the rotating arms and the end effectors, calculating a moving amount in a horizontal direction, a moving amount in a vertical direction and driving data of the rotating arms and the end effectors;

moving a robot based on the moving amount in the horizontal direction and the moving amount in the vertical direction and driving the rotating arms and the end effectors based on the driving data, the robot being formed on a tilt table which is formed on a

horizontal support table;

reading from a storing device means deflection data of the rotating arms and the end effectors which are extended, and compensation data calculated and stored in advance based on the deflected amount; and

compensating the deflected amount by adjusting the moving amount in the vertical direction based on the read compensation data and by controlling a tilt angle of the tilt table with respect to the horizontal support table to compensate for deflection of the rotating arms.

21. (Currently amended) The transporting control method as claimed in claim 15, further comprising:

detecting a placing position of the plate held by the end effectors;

comparing the placing position and a predetermined reference placing position to calculate a displaced amount; and

performing operational control to compensate the displaced amount.

22. (Previously presented) The transporting control method as claimed in claim 21, wherein the displaced amount in said comparing the placing position and said predetermined reference placing position includes a displaced amount in an X axis direction, a displaced amount in a Y axis direction and a displaced amount in a rotational axis direction from the reference placing position, and

wherein the operational control in said performing operational control is performed to compensate each of the displaced amounts in said comparing the placing position and said predetermined reference placing position .

23. (Previously presented) The transporting apparatus as claimed in claim 1, wherein the robot comprises a body which is horizontally rotatably fixed on said horizontal support table, said horizontally rotating arms including an end which is rotatably fixed to said body of said robot.

24. (New) The transporting apparatus as claimed in claim 1, wherein the horizontal support table is formed on a first side of the pair of upright support members, and the

horizontally rotating arms are extendable between the pair of upright support members to take up the plate on a second side of the pair of upright support members which is opposite the first side, and to transport the plate between the pair of upright support members to the first side of the pair of upright support members.

25. (New) The transporting apparatus as claimed in claim 24, further comprising:
a movable table for horizontally moving the pair of upright support members, the pair of upright support members being fixed to the movable table, and the movable table being formed on the first side of the pair of upright support members.